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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,628	11/21/2003	Masami Enda	245768US0TTC	8627

22850 7590 09/23/2005

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EXAMINER

HERTZOG, ARDITH E

ART UNIT PAPER NUMBER

1754

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/717,628

Applicant(s)

ENDA ET AL.

Examiner

Ardith E. Hertzog

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/21/03, 4/8/04, 6/2/04 & 9/2/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-11 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/21/03 & 6/2/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restriction - Response to Arguments*

1. This action is in response to the "Response to Restriction Requirement" filed September 2, 2005. Applicant's election **with** traverse of the invention of **Group I**, claims 1-8, in this reply is acknowledged. The traversal is on the grounds that:

a. "thousands of U.S. patents have issued in which many more than two subclasses have been searched, and the Patent and Trademark Office cannot reasonably assert that a burden exists in searching only two subclasses" (reply, p. 2);

and

b. a search of all the claims would not present an undue burden, per MPEP 803.

These arguments have been carefully considered but not found persuasive. With respect to a., it is initially noted that nowhere in the Restriction Requirement mailed August 10, 2005 is it stated that a search of all claims would involve searching only two subclasses. Indeed, each of the inventions discussed in the Restriction Requirement would, individually, require a search of several subclasses, and the subclasses searched for one invention would not comprise the same set as for either of the others. Accordingly, with respect to b., it is respectfully disagreed that a search of all the claims would not present an undue burden. Furthermore, it is respectfully noted that MPEP 803 discusses those situations wherein search **and examination** of an entire application can be made without a serious burden, whereas, in the instant case, examination of the entire application would require examination of claims directed

towards three distinct inventions, plus consideration of any amendment by applicant and corresponding remarks regarding these three distinct inventions throughout subsequent prosecution. **The restriction requirement is still deemed proper and is therefore made FINAL.** Thus, claims 9-11 are withdrawn from further consideration pursuant to 37 CFR § 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim; applicant timely traversed the restriction requirement in the reply filed on September 2, 2005.

#### ***Information Disclosure Statements***

2. Receipt is acknowledged of the information disclosure statements filed November 21, 2003 and June 2, 2004. As each submission is in compliance with the provisions of 37 CFR § 1.97, each statement has been considered, per the enclosed PTO-1449 forms.

#### ***Drawings***

3. The drawings are objected to, because in Figure 7, no "solid circle", per the corresponding description in the specification (see p. 30), is used. **In addition**, though repeatedly described as "a solid circle" in the Figure 7 description, note that the corresponding symbol is actually a **blank** circle (see p. 30, first and second para).

4. **Corrected drawing sheets in compliance with 37 CFR § 1.121(d), with amendment to the specification as necessary, are required in reply to the Office action to avoid abandonment of the application.** Any amended replacement

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drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR § 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. **Any objection to the drawings will not be held in abeyance.**

#### ***Minor Informalities***

5. The disclosure is objected to, because of the following minor informalities:
  - a. In claim 5, it is suggested that "reducing" be inserted prior to "decontamination liquid", for clarity.
  - b. In claim 6, "selected from a group of" should be revised as "selected from the group consisting of" for proper Markush group language (see MPEP § 2173.05(h) I.).

Appropriate correction is required.

***Specification***

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is therefore respectfully requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 U.S.C. § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 2 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claim is considered vague, indefinite, and/or confusing, due to the language used to describe "the reducing-dissolving step"—i.e., "the reducing-dissolving step includes lowering potential of the radioactive material to a corrosion region of stainless steel". It is respectfully submitted that one of ordinary skill in the art would not be able to readily recognize what is meant by this language—which appears to be a literal translation into English from a foreign document—thereby rendering the intended scope of claim 2 unclear. Revision in proper idiomatic English is suggested. Appropriate correction is required.

9. Claim 5 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claim is considered vague, indefinite, and/or confusing,

in that "the formic acid" lacks antecedent basis. Revising claim 5 to depend upon claim 4 would be one means of overcoming this rejection. Appropriate correction is required.

***Claim Rejections - 35 U.S.C. § 103***

10. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 1 220 233<sup>1</sup> (hereinafter "EP '233") in view of GB 2 284 702 (hereinafter "GB '702"). EP '233 teaches methods for chemically decontaminating radioactive materials, which may comprise the **same** steps required by instant claims 1-8, **with the exception of** use of applicant's "mono-carboxylic acid dissolvent". In the "Description of the Related Art" section, EP '233 discloses:

Several methods of removing the oxide film are known by now. In such methods, a method combining a process of oxidizing and dissolving chromium oxide in the oxide film by permanganic acid [(per instant claims 1 and 6)] and a process of reducing and dissolving iron oxide which is a main component which is a main component of the oxide film by oxalic acid is learned [(per instant claims 1 and 4)]. (p. 2, para. [0004])

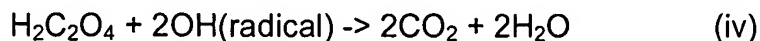
In these decontamination methods, iron ions elute in the case of the reduction dissolution by oxalic acid. Since oxalic acid corrodes a metal base of carbon steel and stainless steel, a method of adjusting the valence and concentration of the iron ions ( $\text{Fe}^{2+}$ ,  $\text{Fe}^{3+}$ ) is learned in order to keep the corrosion potential of the stainless steel in a passivation and suppress the corrosion [(per instant claim 2)]. (p. 2, para. [0006])

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<sup>1</sup> Note that EP 1 220 233 is equivalent to both JP 2002-250794 and JP 2003-50296 cited by applicant.

Dissociating reduced  $\text{Fe}^{2+}$  [(i.e.,  $\text{Fe}^{3+}$  reduced to  $\text{Fe}^{2+}$ )] by a cation resin adjusts the concentration of the iron ion in the oxalic acid aqueous solution [(per instant claim 7)]. (p. 2, para. [0008])

Moreover, as a decomposition method of the oxalic acid after decontamination of the oxalic acid, a decomposition method combining ultraviolet rays and hydrogen peroxide is learned. ...



[(per instant claim 8)] (p. 2, para. [0009])

**Thus**, EP '233 establishes that methods for chemically decontaminating radioactive materials, which comprise the **same** steps required by instant claims 1, 2 and 4-8, **except for** use of applicant's "mono-carboxylic acid dissolvent", were known in the art, at the time of applicant's invention. **Furthermore**, in the "Second Embodiment", EP '233 exemplifies chemical decontamination methods wherein:

The experiment procedure is composed of several cycles [(per instant claim 3)]. As a first cycle of decontamination, a reduction process by using oxalic acid aqueous solution [(per instant claims 1 and 4)]... is performed for 5 hours.

Next, as a second cycle of decontamination, an oxidation process of oxide film by using ozone aqueous solution [(per instant claims 1 and 6)]... is performed for 2 hours, and afterward a reduction process by using oxalic acid aqueous solution [(per instant claims 1 and 4)]... is performed for 5 hours.

Besides, as a third cycle of decontamination, an oxidation process of oxide film by using ozone aqueous solution [(per instant claims 1 and 6)]... is performed for 2 hours, and afterward a reduction process by using oxalic acid aqueous solution [(per instant claims 1 and 4)]... is performed for 5 hours [(hence, again, as per instant claim 3)]. (p. 7, para. [0069] – p. 8, para. [0071]).

**Still further**, in the "Third Embodiment", EP '233 exemplifies chemical decontamination methods wherein, in the "Second Embodiment", "to avoid the corrosion, there is a method of raising and holding the corrosion potential of stainless steel to the passive



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state region..." (see p. 8, para. [0081]), per instant claim 2; in the "Fifth Embodiment", EP '233 exemplifies "a method of reducing a  $\text{Fe}^{3+}$  ion... to a  $\text{Fe}^{2+}$  ion that is separated and collected by a cation resin by performing an electrolytic reduction" (see p. 10, para. [0104]), i.e., "separating and removing  $\text{Fe}^{2+}$  ions and  $\text{Fe}^{3+}$  ions, which have eluted into the reducing decontamination liquid, by cation resins", per instant claim 7; and in the "Sixth Embodiment", EP '233 exemplifies "decomposition of the oxalic acid... by the combined use of the electrolysis and **ozone**..." (see p. 12, para. [0162], emphasis added), i.e., "decomposing the di-carboxylic acid into carbon dioxide and water by the oxidizing decontamination liquid", per instant claim 8. **Thus**, EP '233 exemplifies methods for chemically decontaminating radioactive materials, which comprise the **same** steps required by instant claims 1-8, **except for** use of applicant's "mono-carboxylic acid dissolvent". See **also** EP '233 claims 1 and 3-8, noting that the general term "organic acid" (versus the specific oxalic acid of the examples) is used therein.

12. GB '702 teaches processes for the decontamination of metallic material, especially a lead or iron containing material, wherein the material is contacted with a decontaminating reagent solution comprising an organic acid to dissolve a contaminated layer of the material; the organic acid preferably comprises formic acid, though it may also comprise one or more other known acid solvents, including oxalic acid (see GB '702 abstract). The GB '702 processes also include an oxidation step, which "may take place at the same time as the contaminated metal dissolution... as well as after the dissolution... and may be effected by use of a chemical oxidising agent, eg a peroxide... or potassium permanganate" (see p. 2, first para.). GB '702 teaches that

“[a]ny contaminants associated with the metal which is dissolved will no longer be supported by the metal and in most cases the contaminants will themselves dissolve in the reagent solution” (see p. 1, last para.). **Accordingly**, it would have been obvious to one of ordinary skill in the art, at the time of applicant’s invention, to have used **mixtures** of oxalic **with formic acid** as the organic acid in the EP ‘233 methods, because, as just discussed, GB ‘702 at least generally teaches that such mixtures provide contaminant dissolution benefits in similar metal decontamination processes. When having done so, it is respectfully submitted that, absent evidence otherwise, methods falling within the scope of instant claims 1-8 would have obviously resulted, with determination of suitable relative proportions of such mixtures, per instant claim 5, as well as determination of how best to decompose the formic acid, per instant claim 8, considered to have been within the level of ordinary skill.

### ***Comparative Data***

13. The comparative data presented in applicant’s specification (i.e., as shown in Figs. 8, 9 and 11) have been carefully reviewed. **However**, it is respectfully submitted that these data cannot be considered sufficient to overcome the *prima facie* case of obviousness set forth above, in that they do not appear to be within the scope of applicant’s claims—“objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support” (see MPEP § 716.02(d)). In particular, these data are limited to the **specific** mono-carboxylic acid, formic acid, and the **specific** di-carboxylic acid, oxalic acid, whereas **only** instant claim

4 is so limited. Furthermore, these data are limited to mixtures of formic and oxalic acids in **specific relative proportions**, whereas **only** instant claim 5 appears to be so limited. Still further, the Figure 8 data are drawn towards the **cation exchange resin aspect** of applicant's invention, which is **only required by** instant claim 7 (and instant claim 7 does not require applicant's specific formic and oxalic acid mixtures), and the Figure 9 data are drawn towards the **formic acid/oxalic acid decomposition aspect** of applicant's invention, which is **only required by** instant claim 8 (and instant claim 8 does not require applicant's specific formic and oxalic acid mixtures).

### **Conclusion**

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are considered cumulative to or less material than those discussed above. GB 2 064 852 (hereinafter "GB '852") has been cited for its teaching "that **multicomponent organic acid decontaminating reagents** which may include oxalic acid **and which are subject to radiolytic decomposition** are improved by incorporating formic acid in sufficient amounts to prolong the efficacy of the mixture" (see p. 1, lines 45-47, emphasis added); **however**, the EP '233 methods do not **require** the use of **multicomponent organic acid mixtures**, which, more importantly, do **not** appear to be subjected to radiolytic decomposition. **Hence**, it cannot be concluded that one of ordinary skill in the art would have been motivated to have combined the teachings of GB '852 with the teachings of EP '233, in order to have rendered methods falling within the scope of instant claims 1-8 *prima facie* obvious. Note that US

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5,205,999 is an equivalent of EP 0 533 494 cited by applicant; US 5,832,393 is an equivalent of JP 7-140296 cited by applicant; US 5,958,247 is an equivalent of not only DE 44 10 747, but also JP 9-510784, cited by applicant; US 6,613,153 B1 is an equivalent of JP 2002-513163 discussed in applicant's specification; and the Yaita et al. patents are equivalent to JP 2000-81498 cited by applicant.

15. Any inquiry concerning this communication or any earlier communications from the examiner should be directed to Ardith E. Hertzog at 571-272-1347. The examiner can normally be reached on Monday through Friday (from about 8:00 a.m. - 4:00 p.m.).

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached at 571-272-1358. The central fax number for all communications is now 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
AEH  
September 16, 2005

  
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